

GENOMICS-BASED DIAGNOSTIC ASSAY FOR CANCER

SUMMARY

The NCI seeks licensees for this technology, which describes a genomics based diagnostic assay for the diagnosis and prognosis of cancer patients.

REFERENCE NUMBER

E-023-2009

PRODUCT TYPE

- Diagnostics

KEYWORDS

- genomics, diagnostic, assay, prognosis, cancer

COLLABORATION OPPORTUNITY

This invention is available for licensing.

CONTACT

John D. Hewes

NCI - National Cancer Institute

240-276-5515

John.Hewes@nih.gov

DESCRIPTION OF TECHNOLOGY

Molecular profiling with high throughput assays has gained utility in the management of select cancer patients and several gene expression-based assays are now marketed for improved prognostic accuracy for patients with cancer.

This technology describes a genomics based diagnostic assay for the diagnosis and prognosis of cancer patients. Using a mouse model of breast cancer, the inventors identified a gene expression signature that can predict the outcome for human breast cancer patients with as few as six genes. The gene signature includes a total of 79 cancer survival factor-associated genes and was validated using available genomic test sets that were based on previously conducted human clinical trials. More recently, the six-gene-model was validated for cancers other than breast using multiple, independent, publicly-available human lung cancer datasets. In addition to predicting the outcome of cancer patients, this technology could also be used to stratify patients for further therapy and treat patients by administering a therapeutic agents that alter the activity of one of the aforementioned cancer survival factor-associated genes.

POTENTIAL COMMERCIAL APPLICATIONS

NCI Technology Transfer Center

<https://techtransfer.cancer.gov/pdf/e-023-2009.pdf>

- Methods for cancer diagnosis and prognosis by evaluating expression levels of certain cancer survival factor-associated molecules in patients.
- Treatment of cancer by administering therapeutic agents that alter biological activity of cancer survival factor-associated molecule.

COMPETITIVE ADVANTAGES

Prognostic outcome of breast and lung cancer patients can be identified in as few as six genes.

INVENTOR(S)

Steven K. Libutti and Mei He (NCI)

DEVELOPMENT STAGE

- Pre-clinical (in vivo)

PATENT STATUS

- **U.S. Issued:** US Patent No. 8,715,928 issued 06 May 2014
- **U.S. Provisional:** US Patent Application No. 14/215,574 filed 17 Mar 2014

THERAPEUTIC AREA

- Cancer/Neoplasm